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THE JOURNAL OF PHILOSOPHY

THE BIOTIC CENTER OF PSYCHOLOGY

THE purpose and promise of psychology are so impressive as to dwarf in contrast its very substantial gains. This depreciation of its labors is, moreover, exaggerated by the difficulty, freely acknowledged by many in the forefront of the science, in showing the relation of its several lines of inquiry to its essential purpose. In consequence, the results obtained by this or that psychological research are frequently subject to misinterpretation and to controversy, especially as regards their application to the individual life. Much profit, therefore, might result from clarifying the structure of the science—a task that especially challenges one who, like myself, enjoys the privilege of introducing young men to the study and pursuit of psychology.

The key to this problem is found, I believe, in observing the path by which, between 1867 and 1873, Francis Galton proceeded from his inquiry into the nature and causes of "genius" to his inquiries concerning all forms of human "faculty." His inquiry starts from a new and distinct type of data, namely, the life-career or life-movement of the individual, as this is recorded in the narrative of the biographer; it proceeds into a number of subsidiary fields of investigation, which concern the *estimation* of these life-careers, the *constituents* of the life-movement, and the *conditions*, internal or external to the individual, which affect the course of life. Always his search would end, however, in the application of the fruits of his investigations to the betterment, through a method and outlook wholly scientific, of the individual life-career.

So, sired by a new purpose, in a matrix of data distinct in type, unheralded, unregistered even, this new science of human life was born. It is the epoch of Lyell and Darwin, when the scientific study of man is a new and world-wide inspiration. But the sages of East and West journey, rather, to the halls and laboratories of universities, where Lotze and Helmholz, Herbart and Wundt are diligently contriving new tools for this new study from the long-worked mines of philosophy and physical science, and from the newly found ore of social phenomena. In their hands, and especially in the hands of Wundt, this study of human nature becomes emphatically a *compendium*,—fascinating, fruitful, but without clear distinction from

the other pursuits of science, and without internal unity. *In the histories of psychology we still almost ignore Francis Galton.*

The *psyche,* as science would observe it, is the functioning unity of the individual, and psychology is the science of it. From Aristotle to G. B. Watson we may find substantial agreement upon this. But in what class of data is this individual unitary functioning observed? That is the question we have not with sufficient steadfastness faced. My belief is that, as we dwell upon the underlying logic of Galton's novel procedure, a really startling clarity is given to us, so that we find, as it were, the very soul of this science of the soul, to use terms that are still mildly exciting in certain quarters.

Let me for a moment fix attention upon the present need that we insist upon psychology's concern with the individual life in its unity and distinctness. To follow the Wundtian tradition, as do our current theory and practice, leads to emphasis upon insights and methods which give us conclusions largely statistical in form and applicable only to groups of people or to institutions; our attention thereby is distracted from the insight and method which marks the greatly significant work of Galton, and of Freud also, which derive psychologic data from the history of individual lives, and seek a method by which all the conclusions of the science may be made applicable to the salvaging and betterment of individual life-careers. This concern with the individual life-movement is not only psychology's birthmark, but also her special function in an institutionalized world. To see this is, indeed, to psychologize schools, society, philosophy, and all human outlook and endeavor.

In working out the "logic" of psychology conceived after the Galtonian pattern, I find myself concerned with four problems: I must show that:

1. Psychology deals with a type of data peculiar to it, which indicate the true center of the science, and its essential purpose and method.

2. All schools (and factions) in psychology result from the need of applying to *subsidiary* lines of psychological inquiry distinctive concepts and methods; of which we grasp the true significance only when we refer them to the true center of the science.

3. Through this outlook we approach a theoretical basis which promises to support quite adequately the whole superstructure of the science.

4. In particular this point of view suggests the principles and method by which the fruits of psychologic inquiry become applicable to the particular case or person.

The first two of these propositions I deal with in this paper. A second article, "Theory and Practice in Psychology," deals with the remaining two. A third article, "The Normative in Psychology and in Natural Science Generally," meets certain objections that I have encountered in my previous efforts to expound this point of view.[1, 2]

The type of data upon which psychological laws must be established are those, by definition, that constitute the functioning unity of the individual. Even in the case of such non-personal individuals as oaks, or crystals or nebulæ, this functioning unity we seem driven to present in the form of a history or narrative, an account in which what now occurs is made evident only through the light thrown by past events and by the outcome. Something of the nature of *action* is observed and ascribed to the individual; it grows and matures in some sense until the life-career is done.

In the case of persons, the complex life-movement of the individual obviously is not even suggested by any physiological formula; and we recognize that introspection and memory tend to overlook and even distort the very essentials of an act. To approach the truth of any event in personal history we observe through a considerable period the life-movement, and construct the "active history" of the person. Though a small section of this history will tell us much, a better understanding comes to us of what takes place from moment to moment in the person, as we extend our vision to include his earliest days; and much that still remains obscure to him and to us in his present motive and outlook will become evident as we observe the outcome in subsequent acts and in changed disposition and attitude. So far as we *can* know the functioning unity of the individual, it is manifest in his life-story, the *bios*, the life-career, as a whole.

Let us consider the foundations of this personal acquaintance. At five months, the infant reveals much of sympathetic *rapport* with persons about him. The attention of the child is fixed upon the features and voice and upon other expressions of the integral activity of persons. This *rapport* eludes physiological analysis or explanation; but the temptation to infer that *therefore it does not exist* is successfully resisted by observers so critical and competent as Wil-

[1] *Upon Introducing Psychology*, June, 1926.
Introduction to Psychology, Sept., 1926.

[2] I take opportunity to express my special indebtedness to criticisms and encouragement from Professor John Dewey, and from Professor Charles Spearman, of the University of London, and Professor Charles Fox, of Trinity College, Cambridge.

helm and Clara Stern, Dearborn (*Motor-sensory Development*), Bertrand Russell (*On Education*), Margaret Shinn, and others.[3]

By the *seventh* month this personal insight attains a level indicated by the following narrative, told by the Sterns of their own child: "For some time I have noticed in the child something that strikes me as a first game. When I am feeding her she looks up at me (the face); I look another way, the child stops drinking, turns from her side on to her back, and watches me with a roguish look which, of course, I can not notice, only my husband. If I now turn to the child, a beaming smile of pleasure flashes over the little face, and she begins the teasing game over again."[4]

This personal insight is directed towards, and is responsive to, the attentive acts and attitudes of the other. At birth, as before birth, the life-movement of the child is comparable in general terms to the growth, the maturing, and the adaptive responses of an oak, or of a worm. But when, in the third week, we see the infant not merely respond to stimuli, but *stare*, and a month later actively look about her, and within another month or so clearly look around for a missing person or other object, we observe the life of *attention*.

In the case cited, the "teasing," "roguish" game "depends upon the baby's perception not merely of an act, but of a sequence of acts, remembered and foreseen; further it depends upon the baby's recognition that this *biotic* perception and insight is common to all parties to the game. However indigestible the facts may prove to physiological preconceptions, to deny the immediacy of such biotic insight makes nonsense of human life. The infant of seven months enjoys a life of biotic apprehension, communication, and *rapport*, within a certain range.

Upon such biotic insight, in the varying measures with which individuals are endowed with it, all biotic narrative depends. In expert biography, the technique of the historian and a knowledge of much "human nature," with some grasp of psychological "laws" also are needed. In a recent article,[5] William E. Barton, Lincoln's zealous biographer, well illustrates the art of biographic narrative.

The phrase "under God," was at the last moment introduced by Lincoln into the circle of charmed words that were to be his "Gettysburg Address." "That the nation shall, under God, have a new birth of freedom." By historical methods Barton establishes that Lincoln had not intended to use these words, did use them,

[3] Especially significant is Russell's admission of the obviousness and frequency of such *rapport*, since in an earlier work (*The Analysis of Mind*), he supposes that personal insight rests upon inference.

[4] Psychology of Childhood, p. 110.

[5] *New York Times*, Jan. 2, 1927.

and was glad of it; but Lincoln himself could not have told us whence came the rather unusual phrase, nor why they came to his lips. The psychologist understands why Barton assumes this, and why he turns to Lincoln's earliest impressions, and to the deeper hidden currents of his life. The boy's little library, Weem's *Life of George Washington,* with its frequent use of this phrase, "under God," Lincoln's Springfield farewell address, in which he compares his task with that of Washington, these are links in the chain of events which Barton narrates. Together they convey conviction to the reader that the explanation at least is plausible. A narrative of what came after in Lincoln's life would, I think, confirm this belief.

Oliver Goldsmith, despairing, with the bailiff there and the jail in view, drunken with borrowed money, looking up at Samuel Johnson's burly, masterful, kindly form; how are we to understand what is taking place in him? The answer is only to be found in the narrative of his life-career which explains both the scene and the manuscript of the *Vicar of Wakefield* in the drawer; but the narrative must be continued through his happier years if we are quite to understand what rejuvenation and fortifying of the heart were then threatened to the point of breaking. For it is characteristic of personal events that they are described, not only by the accumulation of tendency which results from past events, but also by the habits and attitude and disposition which prove to have been established by the present act.

These *biotic data,* then, present a sequence of acts of attention moving within and upon a more original and wider circle of processes of maturing and adapting to circumstance. They present, too, an accumulation of tendency in which by *recognition* the *mnemic traces* of events are bound together or "integrated" into what we commonly term the individual "mind." But, since at any given instant, most of this is not "in mind," and much of it never "comes to mind" at all, let us simply call it the *mneme* or the *mnemic structure and tendency* of the individual. We entertain no hypothesis of its relation to the physical world, except those relations which from time to time are actually observed.

The data given us by biotic insight and tested by any principles of narrative which we may possess, assure us of the genuine activity and causative efficacy of attention; and with the development of mnemic structure and tendency through events and acts in the individual life, the person stands out as in a peculiar sense an original center of force and agency. His history is an *active history,* whatever we may say of the life-history of crystal, oak, or nebula. In human beings this mnemic factor and the selective, integrative work

of attention transparently so vastly exceeds that of any ape yet observed, that we set men off as *persons*, and assign to them while sane a measure of responsibility we deny to apes.

The validity of these personal, biotic data, and of all narratives of life-movement and of life career, rests upon a special type of insight with which we are variously endowed. That dependence upon immediate insight into fundamental "configurations" in the situation is not peculiar, of course, to biotic perception. What is peculiar, probably, is the greater difficulty in finding unit descriptive terms.[6] In the second paper I will discuss the probability of securing, in regard to these biotic data, a much higher degree of validity, when, through clarification of the structure of the science, the problem receives new emphasis in psychological research.

Biography seeks to observe, establish, and validate the particular facts and events of personal life, and to construct a true history of individual life-careers. Psychology, no doubt, assists, and will much more effectively assist, in this biographic or biotic construction and narrative. But its essential task is, as in the case of all natural sciences, to discover the *laws* that prevail in the individual instances or data which are presented to it in such narratives.

I don't suppose that the present inquiry either adds any new field to psychology or discards any; rather it points to a conception of the science which gives to every field now investigated by psychologists a place and function that seems to remove it from any possible reproach or controversy concerning its right to a place in the science. But, by suggesting that all these fields of inquiry relate to a central field, which I call the biotic center of psychology, and which discovers the laws that prevail in individual life-careers, I expect a new emphasis to result upon that center. I wish now to describe the six types of research which seem to me to lie within the biotic center of metropolis of psychology.

1. The first type of such biotic or bionomic research regards the marks of a superior or successful life in contrast with one baffled and abortive. Here the work of Galton and of Freud lays the foundation. The former bases his work, we have seen, upon biographies; the latter secures for his data the life-history or case-history of his patient. Each has arrived at extremely significant principles or laws; though each may be charged with important oversights and assumptions. It is Galton, of course, who suggests the subsidiary problems which arise in the study of integral life-careers, and lays down many of the principles of method by which these subsidiary

[6] To this difficulty the "structural" psychologist applies himself, in a very limited field, and, I hope to show, with a certain indirection, through misconception of his problem.

inquiries may be pursued. These are the problems of the *estimation* of life-careers, the *constituents* of life-careers, and of the *conditions* of life-movement. In each study which thus radiates from the metropolis of psychology, Galton has inspired psychologists of the first importance: Cattell, Binet, Thorndike, Spearman, Terman, and many others.

2. The second type of bionomic study seeks to classify persons, not on the basis of physiological traits or social serviceability, but on a strictly psychological basis, in terms of the life-career itself. James, Ostwald, and Jung here point the way toward an inquiry of great difficulty and importance.

3. Medicine advances to a new plane as it emphasizes the conception of a normal, healthy physical life, unhampered by defect and disease. Here the problem is comparatively simple, and has long been studied. But in the life-career of the individual so much is determined by endowment and environment that the rare attempts to portray what is common to all normal lives, and to set the standards proper to every human being, unhampered, unimpaired, have gone no great way. We have portrayal of normal infancy, especially in the work of Miss Shinn, who gives her account the historic form which is essential. In Chapters IV to VII of my *Introduction to Psychology* I extend the inquiry to the whole of life, with emphasis upon maturity and senescence. The inquiry, of course, is not to be confused with that which concerns the *average* life-career, and may, I hope, be distinguished from mere classification. *The question of normal human maturity seems to me the very center of all psychological study,* for all generalizations ultimately depend upon it. For this reason I call the central study of psychology *Bionomia,* or *Bionomy.* As an illustration of study in this field I would cite the well-known *Varieties of Religious Experience;* for beneath the classification of "varieties" James attempts to discover the *range* of normality, as well as the mark of superiority in this class of phenomena.

4. A fourth "infant industry" in this metropolis of psychology concerns the *technique* of applying the laws discovered in every central and subsidiary field of research to the particular case or person. This I shall develop at considerable length in the second paper, "Theory and Practice in Psychology." That sort of instruction which we should call education rather than training, and that division of education which we rather clumsily call Mental Hygiene belong here, and depend upon the application of this technique.

5. Underlying these essential industries of our metropolis is the

discovery and examination of biotic material, from which we derive our laws. *The Ordeal of Mark Twain,* by Van Wyck Brooks seems to me a good illustration of the application of psychologic principles to the discovery and selection of those facts in a great man's life which may serve later as the basis of further generalization. Krutch's life of Edgar Allan Poe seems to me a good illustration of ill-considered application of such principles. O'Higgins' *The American Mind in Action* illustrates the danger of confusing psychological generalization with biographic portrayal. *The science and art of biography demands a specific discipline, and aloofness from any effort to generalize while establishing data.*

6. A distinct class of investigation relates to the despatch of the subsidiary problems which arise in the study of life-careers to specialists who combine with psychological interest and insight facility in related fields of science. This requires a continued interest in the clear distinction between the several subsidiary lines of inquiry with which I now propose to deal. Through the results of this type of inquiry we may in future avoid attaching to the fruits of these subsidiary inquiries an importance which does not belong to them, and thus make them available for use in those studies which I have assigned to section 4, above.

I will now attempt to distinguish between the three great lines of subsidiary inquiry, that deal with the *estimation* of life-careers, with their *constituents,* and with their *conditions.*

In other scientific inquiries the objective or purpose of the inquiry lies outside the material with which the science deals; but in the case of biotic psychology, the objective is obviously good or better life-careers. Hence the *estimation* of life-movement, or the measure of its attainment, is essential to psychologic inquiry. This theoretical statement may be confirmed through the study of actual psychological investigations, which, in the case of the more fundamental studies, such as those of Galton and Freud, rest upon the distinction between the superior and the baffled life.

While it would be absurd to say that we have no knowledge whether a given life is superior or baffled, yet the precise measure of difference is a difficult matter, and usually reduces to the measure of certain achievements or functionings. Galton distinguishes between these achievements and the attainment of a successful life, but insists that they tend to vary together. Those whom society counts great have in fact lived full and successful and happy lives; they have in larger measure than the average man attained the essential aims of living. There are many exceptions, but the tendency is there.

The attempt to measure attainment by achievement leads to a measure of *capacity for* a given achievement. Through the failure to distinguish the several subsidiary lines of psychologic inquiry, this measure of capacity for a specific achievement, or for a general class of achievement, has been confused with the measure of some constituent tendency in the life-movement itself, such as intelligence, or memory, or perception. This confusion, of course, implies a return to the "faculty" theory.

In this field certain secondary measures, such as the I.Q. and the E.Q. appear, which deal, the first with the rate of development, and the second with the efficiency with which capacity is exercised. Since all these inquiries result in merely statistical conclusions their application to the individual case must be through reference to the biotic center of our science. But they are directly applicable to *institutions* which do not pretend to be directed toward the full realization of individual possibilities in a life-career.

From the central biotic inquiries of our science there radiate two other lines of inquiry which it is essential to distinguish: these concern the *conditions of* and the *constituents in* the life-career. They may be distinguished much as we distinguish the temperature necessary for a chemical reaction from the process of reaction itself. From certain points of view this distinction is at least unimportant, but for atomic, Daltonian chemistry it is important.

The *constituents* of the life-movement are themselves movements or processes, or such implicit processes as we call *tendencies*. But the *conditions* of the life-movement are presented to us as a matter of structure, and of possibilities of response rather than as processes and tendencies. There may, however, well be tendencies external to the life-movement of the person which obviously are conditions and not constituents of the life-movement, such as industrial or other social tendencies and processes.

These conditions of the life-movement and life-career are of two general types. The first rests upon the conception of reflexes, conditioned or unconditioned. These are at least *conceived* as a matter of structure, and not as a general tendency or propensity to exercise. However faulty the conception from a strictly neurological point of view, it has been of service in suggesting principles of stimulation, training, and control. The disservice results from supposing that psychology is wholly or principally concerned with such possibilities, and in neglecting the integral life-movement which brings about the exercise of reflexes and directs the formation of new connections through selection.

The greatest evil that has resulted from this confusion is the

supposition that the capacities of the person are wholly specific or particular, as a reflex or habit must be. Hence the doctrine that transfer of training rests upon the presence of identical elements of structure and of response, in the old and the new form of behavior. The chief service of the *Gestalt* theory is, I judge, that, ignoring the question of physiological structure, it applies itself directly to those general factors in situations to which, in fact, animals, and presumably persons, are found to respond.

The peculiar value and application of this method is, I think, indicated by Koehler's well-known series of experiments with apes. He so orders the steps of learning as to secure the maximum insight of which the several animals are capable. In this he does not at all determine the internal conditions which make such insights possible. He really gives us nothing but a logical analysis of the problem from the ape standpoint. Just as Thorndike's study of the conditions of learning tends to a certain type of physiology, so the *Gestalt* researches, like those of Ruger, point to logical analysis without reference to physiology. This is evident in Koffka's Chapter V. The structure here is in the last analysis identical without that logical structure of the cosmos which is, as Woodbridge puts it, antecedent to thinking,[7] and conditions it.

For this reason I suppose that those are mistaken who look upon the *Gestalt* psychology as related closely to the analytical psychology of Stout or Ward. That deals with the processes and tendencies (or functions) which go to *constitute* the integral life of the person. The method of inquiry and the value of the results obtained are not at all those which the research in *Gestalt* has in view. The relation between these inquiries is only seen when we refer each to that central study from which they are derived, namely, the investigation of individual life-careers.

The processes which *constitute* the life-movement of a person include maturing, adapting or learning, integrating, and attending. The last implies the others and is, moreover, creative of a secondary or derived world in which the personal life is lived, a world of communication or communicability.

When we confuse the conditions of the life-movement of the person with the constituents in that integral life-career, we arrive at tendencies or impulses which are based upon the conception of reflexes, and of response to stimuli. We then look about for some instinct of "self-assertion" or other contrivance by which these several impulses may be integrated into the personal life. But a narrative of the life-career of a person presents a sequence of attentive acts in which integral cognitive activity is the essential

[7] *The Realm of Mind*, p. vi.

tendency or direction of the life, in which "instincts" appear to be sometimes the stimulus to activity and sometimes the channel for this personal integral activity, and sometimes a hindrance to it. In all cases they appear to be conditions of, and not constituents in, the personal life-career which a life-history records.

The functions or tendencies that come to light in these processes of integral personal activity are those that are familiar in the older type of psychology which emphasized cognition: such as perception, recognition, and reasoning. The resultants in the "mnemic structure of personality" may be described under such terms as sensation, memory, and concepts. Sensory qualities or quales I judge to be in fact the identification of unit descriptive terms that are necessary to insure the validity of biotic narratives and of all practical judgments based upon them.

The distinction between the constituents in, and the conditions of, the integral life-career of persons is well brought out in contrasting the attitudes of attention which persons normally develop with the *milieux* or social media which serve as the theater for their exercise. These terms I have considered more at length in my *Introduction to Psychology* (September, 1926), with the hope of displacing the psychology of "instincts of self-assertion and self-abasement" or of "display and submission" by the recognition that the very nature of attention leads to a distinction between an assertive and a submissive or compliant attitude. The assertive attitude of challenge finds it *milieux* in the domains of sport, art, science, industry, etc., to which the conception of *gestalt* may well be extended. The "logical structure" of these *milieux* is a primary concern of the psychology of the conditions of living, as the order of development of attentive attitudes is significant in the study of the constituents in personal life histories.

By this account of the metropolis of psychology with its several types of research, and of the three trunk lines of subsidiary investigations, I suppose that I have found room for every existent or prospective type of psychology or psychologist, and have removed occasion for unprofitable controversy by indicating that inquiries that purport to be coterminous with the whole field of psychology are in some cases merely a branch line upon one of the three main arteries of subsidiary study.

Some questions here raised are dealt with in greater detail in the second paper, "Theory and Practice in Psychology," which applies especially to the last two of the problems which I outlined above.

PERCY HUGHES.

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AN INSTRUMENTAL VIEW OF THE PART-WHOLE RELATION

ZENO of Elea is known to us for developing certain puzzles to defend a philosophy that must, even to the common sense of his day, have seemed a mystical and perhaps old-fashioned view of the world. Since his time, philosophers have often resorted to the same tactics. The philosophical puzzle has repeatedly proven one of the most effective talking points of old theories revived and dressed in new terminological garments—of attenuated anthropomorphisms such as various idealisms or teleological explanations of things, of sophisticated naïvetés such as an absolutism or a static view of some process of evolution. In modern times, the device has been invoked to show the insufficiency, not only of current common sense, but of science as well, and so to prepare the ground for "philosophy" in a sense of that term which keeps philosophical problems safe from attempted solution either by common sense or by scientific method.

Perhaps scientific method has enjoyed too much success in dealing with some of these puzzles—notably that of infinity and possibly also that of the subject-object relation—for them to serve in such a cause. At all events there seems to be a renewed emphasis to-day upon the part-whole problem. Certain neo-Hegelians have sought to show the inadequacy of mere careful scientific ("linear") reasoning for purposes of dealing with the part-whole relation, and to defend "systematic implication," a type of logical connection between propositions which permits a change of terms between "premise" and "conclusion."[1] According to this view, implication is a rationally necessary connection between parts of a given whole, one part being said to "imply" another.

As further instances of renewed emphasis on the part-whole relation, may be cited (1) Whitehead's organic conception of enduring patterns[2] or wholes, a conception which certain psychologists, members of the *Gestalt* school, appear to share; (2) Lloyd Morgan's conception of an emergent as something more than the additive resultant of the constituents; (3) Bergson's conception of individual.

[1] *Cf.* Bernard Bosanquet: *Implication and Linear Inference,* especially Chap. II; also H. R. Smart: *Philosophical Presuppositions of Mathematical Logic,* especially pp. 10 and 96. More accurately, when a scientist jumps from a proposition couched in one set of terms to a proposition employing (from the point of view of formal logic) a quite different set of terms, according to this neo-Hegelian view, the scientist, in his capacity as scientist, may hold and may be right in holding, the second proposition to be logically implied by the first.

[2] A. N. Whitehead: *Science and the Modern World,* especially pp. 95 ff. and 186 ff.

The problems of infinity and of the knowledge relation have lent themselves to treatment by special disciplines no longer regarded as branches of philosophy in many curricula. Mathematics has claimed infinity and psychology is coming to take over the study of the process of knowing. But the puzzle of the whole and its parts is seemingly broader than the bounds of psychology and does not, as yet, at least, fall inside the conventional field of mathematics; nor are there other special disciplines to claim it. It is, indeed, a puzzle that concerns the very nature of scientific method, a puzzle that has served to cast reflections upon the validity of this method of achieving knowledge, or to delimit the field within which this method is valid, and so to protect certain notions against the onslaught of careful scientific reasoning.

Is the part-whole problem, then, incapable of resolution in a manner comparable to that in which the modern mathematical theory of infinity has resolved the infinity puzzles of Zeno and of more recent writers like Kant and Bradley? Or can it also be resolved by a relativistic and scientific approach? If it can, one of the chief defenses of modern mysticism will be done away with; one of the chief philosophical devices for confining scientific method and rigorous, straightforward ("linear") reasoning will have been confuted.

The present attempt to deal with the part-whole relation from a relativistic point of view presupposes a relativistic theory of identity. A judgment of identity is held to be in the nature of a value-judgment, a judgment of the same general class as one of esthetic appreciation or moral approval. Thus *A* is judged to be identical with *B* always for some person or for certain purposes. Consequently, what is identical for one purpose may for other purposes need to be differentiated.

The question as to whether the whole is to be identified with its parts, or with its parts in some specified set of relations to each other, becomes a question as to the purposes for which this identity is to be asserted.

We may distinguish two chief purposes for which a term or an expression may be employed to designate or specify an object, process, situation, *aut cet.*, and, corresponding to this, two chief purposes for which the identity of things designated may be asserted or denied. (1) A thing may be designated so as to be able to deal with it in a physical or objective sense, e.g., to lift it, touch it, or in general to control it or employ it in controlling something else. (2) An object, *aut cet.*, may be designated so as to employ the designation in reasoning about the object. For the first of these purposes it

is necessary that the reference of the designating term or expression should be unambiguous as well as apropos, if the term or expression is to be satisfactory. The term or expression must symbolize the object or objects in question, and no others. Moreover, if two persons are involved, the term or group of terms must be employed in the same way by both parties. For the second purpose appropriateness, lack of ambiguity, and common usage of terms are necessary to a satisfactory designation, but not sufficient. In addition, the expression must conform to the convenience of the reasoning process.

In general an object, situation, *aut cet.*, may be designated for purposes of controlling it, or employing it to control something else, in two ways: (1) synthetically, by its name or by the name of the class of objects to which it belongs plus limiting modifiers, and (2) analytically, by the name of each of some set of parts into which it is analyzable, and the names of the relations among them which are necessary to determine uniquely this particular whole or combination. For the purpose of controlling the object it makes little difference directly which method of specification is employed. The same object will be lifted, touched, or what not in either case. For this objective or practical purpose, then, the whole is identical with its parts and the necessary and sufficient relations among them. The two expressions, analytical and synthetic, "mean the same thing."

It should be said, moreover, that, according to the present view, the intellectual or logical analysis of the whole into these parts and relations ordinarily does not destroy, damage, or in any wise affect the whole analyzed. The process of analysis is really a process of substituting one set of linguistic symbols for a thing for another set of linguistic symbols for it, and, in general, the thing symbolized is not affected by the substitution. Analysis of an organism is, therefore, not to be confused with dissection. It is a conceptual and not a laboratory process. Human behavior presents practically the only case in which a change of linguistic symbols for it may alter it; if a person learns of an analysis of his projected behavior, he may behave differently. But if, in the case of most things, a change of linguistic symbols does not affect the thing symbolized, neither is the one set of symbols—the analytical or the synthetic—necessarily less or more valid or tenable than the other set. The validity of each method of symbolization is a question of the function it performs.

The puzzles connected with the part-whole relationship arise from the fact that while, for the direct practical and objective purpose of control, the one set of symbols (the parts and their relations) means

the same as and may be substituted for the other set of symbols (the whole), for linguistic (logical and grammatical) purposes the two are not entirely identical,—the one set of symbols requiring a plural verb, being itself plural, and the other set a singular verb. Moreover, the very ground of survival of the practice of substituting the one set of symbols for the other is that in some sense it is easier to manipulate or to reason in terms of the one set of symbols than the other. If for this logical purpose the parts and their relations were identical with the whole, there could be nothing gained (or lost) by substituting one set of symbols for the other. But the substitution of the parts and their relations, that is, the analysis, for the whole enables us to reason about the thing and draw many conclusions about it which we could never draw, so long as we considered it simply as a whole. In other words, there is clearly a distinction for this logical purpose between the parts and their relations on the one hand, and the whole on the other. Either the analytical or the synthetic symbolization of a thing, as methods of speaking or thinking about it, will serve if it is a question of handling it "physically"—hitting it, dodging it, or what not. But if it is to be handled "mentally," if it is to be reasoned about, there is clearly a difference between parts-and-relations and whole. This is, of course, to say that *indirectly* the parts and their relations are different from the whole for the function of control, because by aiding reasoning they aid in the prediction of consequents from antecedents. *Directly,* however, they are identical—the two sets of terms "mean the same thing" objectively.

The part-whole relationship may perhaps be usefully compared to the relationship between two expressions in mathematics which are said to be "equal." Let us consider, for example, the equality between $1 - \sin^2 x$ and $\cos^2 x$. For objective purposes, e.g., measurement, $1 - \sin^2 x$ centimeters and $\cos^2 x$ centimeters are exactly the same. Consequently, we call $1 - \sin^2 x = \cos^2 x$ an "identity." But for purposes of mathematical manipulation, the expression $1 - \sin^2 x$ is vastly different from the expression $\cos^2 x$, and these differences enable us to perform different types of mathematical operations in the one case from those we can perform in the other. Thus, we can easily divide the expression $1 - \sin^2 x$ by the expression $1 + \sin x$, the quotient being $1 - \sin x$. But the expression $\cos^2 x$ does not lend itself to this type of algebraic manipulation; and unless we substitute $1 - \sin^2 x$ for our dividend, or resort to some more roundabout device, we can only write the quotient as $(\cos^2 x)/(1 + \sin x)$.

Yet, for purposes of the objective physical measurement of dis-

tance, $1 - \sin^2 x$ cm. is the precise equivalent of $\cos^2 x$ cm. For such objective purposes, then, these two expressions are identical, but for purposes of mathematical manipulation they differ.

The situation with regard to the parts and their relations on the one hand and the whole on the other is very much like this relationship between these two mathematical expressions. We can substitute the parts and their relations for the whole very much as in mathematics we can substitute equals for equals. And by substituting the parts and their relations for the whole, we are enabled to perform certain logical operations which would otherwise be difficult or impossible. For the direct objective purpose of control the parts and their relations are identical with the whole, but for logical purposes there is a difference,—there is something to be gained by analysis, i.e., by substituting the parts and their relations for the whole.

But in spite of this resemblance between the part-whole relationship and the mathematical relationship of equality, we can not assert that "the whole is merely the sum of its parts." One may agree with the advocates of an organic conception of *whole* in objecting to this proposition, though such agreement affords no support to the view that analysis of a whole *qua* analysis is of dubious legitimacy, or to the view that "linear" inference, reasoning in which the terms of the conclusion appear in the premises, is in need of supplementation by or inclusion in some "systematic" process. The addend-sum relation is, to be sure, a special case of the part-whole relation. But the part-whole relation is not necessarily an addend-sum relation. For the peculiarity of a sum is the irrelevance of most relations among the parts (addends), $a + b + c = c + a + b = a + c + b$, etc. Again, as a *sum* of so many sticks, say one cord, a neat wood pile in the back yard is identical with those same sticks scattered hit-or-miss over the yard. But as a whole of the type which we designate as a neat pile, there is obviously an important distinction. Some wholes are sums, but in a great many cases "the whole is not merely the sum of its parts"; is not, in fact, a sum at all, precisely because *arrangement* of parts is an essential to the whole.

The notion that parts and whole stand in some arithmetical relationship is implied also in the statement, "the whole is greater than the sum of its parts." Clearly this will not do either—it implies that (1) the sum of the parts, (2) the whole, and (3) the difference between the whole and the sum of its parts, are three distinguishable quantities or magnitudes. Moreover, these magnitudes must be "of the same dimension" so that they can be added to

or subtracted from each other, as ten seconds can be added to twenty seconds, or three calories subtracted from five calories. We can not say either that twenty seconds is greater than three calories or that it is not, in the ordinary sense of "is greater than." Nor can we make such a quantitative comparison between the whole and its parts. Our statement should read, "The whole is different from the sum of its parts in many cases; further specification of relationship among parts is required *than* for a mere sum."

This notion of an arithmetic relationship between whole and parts is logically allied to the proposition that qualitative differences can all somehow be "reduced to" quantitative[3] differences; indeed, it can be deduced from this proposition. To say that all qualitative differences can be reduced to quantitative differences presumably must mean: (1) that all differences whatsoever and all things differentiated, too, can be arranged in a single series; (2) that this series can be matched, one for one, with (some of?) the terms of the numerical continuum (not including imaginary numbers); and (3) that, for some properly chosen method of matching, if any of the items of this all-inclusive series of differences and things differentiated is "added to" (or "subtracted from") any other, say the item matched with ten is added to the item matched with three, the result will be the item matched with thirteen—in general, the sum of the items matched with any two numbers will be the item matched with the sum of these numbers.[4] So far as is known at present, this third proposition does not apply even to differences of spatial position, let alone differences between one dyne upward and one second, or one meter south and one gram, or one dollar and one doughnut. Indeed, mathematically, quantitative differences, instead of being used to define qualitative differences, are themselves defined as a very special class of qualitative differences.

One other phase of the part-whole relation calls for comment. In various ways one type of analysis of a whole, which for convenience we may designate as a physical analysis, has often been given a peculiar status. By a physical analysis is meant one which follows along the lines of a possible or actual physical dissection of

[3] As ordinarily understood, the proposition presumably means "reduced to differences between scalar quantities of the same dimension"—vector quantities such as 10 miles north and 6 miles east differ in at least one other respect than magnitude. And the difference between 10 seconds and 5 calories is certainly not what is meant by a purely quantitative difference.

[4] The rigor of the third proposition might possibly be slightly relaxed by permitting some other arithmetical operation to be substituted for addition, if desired. Practically, the difficulties of reducing all qualitative to quantitative differences would not be significantly diminished.

the whole analyzed. Thus, an analysis of a society into individuals or of a single organism into organs, tissues, or cells, would be a physical analysis. So also, an analysis of the behavior or behavior-traits of a group into the behavior or behavior-traits of individuals would be a physical analysis.

On the one hand, a physical analysis is often felt to be superior to other possible analyses in that it is somehow an "explanation"—not a mere description of what is observed to take place.[5] On the other hand, some have urged that this sort of analysis, if not analysis as such, not only does not explain the whole, but actually damages or even destroys it; that analysis of a whole into separate elements yields not the constituent parts of the whole analyzed, but a number of new wholes; that when a thing becomes part of a whole it ceases to be a separable entity and loses, to a considerable extent, its individuality; that a whole can not be constructed out of separate individual units.[6] But logical analysis is not laboratory dissection, and the effects of dissection do not necessarily appear in a logical analysis. Vivisection doubtless damages the organism as a whole, but conceptual analysis literally does not touch the body analyzed.[7] Physical separation and logical separation or distinction need to be carefully distinguished. Conceptual analysis permits the parts to be conceived *as they are when parts of the living whole*, and not as they would be if physically isolated. The very assertion that a part of a whole is not a separable entity employs a conceptual separation (i.e., a distinction, not a physical separation) of the part from

[5] *Cf.* for example, F. H. Allport: "The Group Fallacy in Relation to Social Science," *American Journal of Sociology;* May, 1924.

[6] *Cf.* R. M. Ogden: *Psychology and Education*, especially p. 149. The *Gestalt* psychologists employ this argument in attacking the analysis of consciousness into mental elements. They also employ it in attacking other analyses *qua* analyses. Thus Ogden objects to the conception of human behavior as a complex of numerous unit responses, p. 20 ff. With the attack on introspective analysis the present writer sympathizes cordially. The issue here is with the objection to the analysis of any whole into separate constituents,—with the insistence on "indivisible wholes which can be adequately described and defined only in their totality."

[7] Certain introspective psychologists apparently hold that in a trained "observer's" introspective analysis of his own consciousness "laboratory dissection" and conceptual analysis coincide. With the *Gestalt* psychologists we may object (1) that this "laboratory dissection" of consciousness (i.e., of the total response of an organism) yields not the separate constituent elements of the whole so "analyzed," but rather a number of new wholes (new total responses); (2) that the original consciousness (total response) can not be constructed out of the supposed parts (new total responses); (3) that these "parts" (new total responses) are highly sophisticated forms of conduct, and not to be found in infants. With the merits of introspective analysis as a conceptual analysis we are not here directly concerned.

the rest of the whole. Every part is, *ipso facto,* a conceptually separate and distinct whole.

Moreover, even if this objection against physical analyses were valid, it would hardly discredit analysis as such. For there are other kinds of analysis besides the physical, and some kind of analysis is essential if our descriptions and definitions of things are to be adequate as instruments of prediction and control. Every concept that has definite meaning involves analysis, because it involves distinguishing the thing the concept designates from other things.

Two illustrations of non-physical analyses may be cited. For psychology the behavior of a human organism can be analyzed not only into neural, muscular, and glandular functioning, but also into talking, thinking, and doing; or sleeping, eating, working, and playing. Again, for sociology the behavior traits of a group may be analyzed into individual personalities, or into various institutions: property, technology, family-system, etc. With regard to this second case it may be remarked in passing that the current myth that somewhere psychology holds the key that will unlock most of the perplexing problems of the social sciences, presupposes a neglect of other forms of group analysis than the physical analysis into individuals. In so far as the social sciences find it useful to employ non-physical analyses of group activities, psychology can contribute little directly to the solution of the problems of social science. There is no royal road to understanding group behavior via psychology—or via any other route, for that matter.

A whole, then, may be analyzed into parts in many different ways. As the *Gestalt* psychologists have suggested, an analysis is a veritable construction of the person who "makes it." The parts are not logically given in the whole. In constructing an analysis, a person builds up a new—and perhaps better—mode of response to a thing—a new way of dealing with it "mentally." The construction of a good analysis is a large part of the task of successfully understanding anything. And "goodness" or "badness" in an analysis is goodness or badness for purposes of successful dealing with the thing analyzed. The connection between parts and whole, or rather between a term and its intension, is *instrumental,* not *inferential.*[8]

But the construction figure of speech is not altogether adequate. If a person, given a whole, must still logically and conceptually construct the parts for himself, creating new categories of thought; so also, given the parts, must he construct the whole. Moreover, many wholes can be constructed for a given set of parts; just as

[8] This does not imply, of course, that inference is not instrumental.

many sets of parts can be constructed for a given whole. And the validity of either type of construct is a question of the usefulness of the constructed concept or of the possibility of employing it in propositions consistent with other useful propositions. Does it help one in his dealings with his world?

The notion that society (quite apart from the question of the utility of the concept "society") is somehow less real than the individuals who compose it[9] appears to derive from the metaphysical preconception that some parts or wholes are real in their own right—not mere constructs of convenience. And again, such a view as that of Allport regarding the superiority of "physical analyses" to other analyses as "*explanations*," seems to imply some remnant still of the doctrine of sufficient reason. The object of science is presumably not explanation, but a generalized description which may facilitate prediction and control. What is required, therefore, is an analysis which will aid in accomplishing this object. The merits or demerits of a physical or any other type of analysis are for a scientist questions of the success they yield in predicting and controlling. And, so long as science has new worlds to conquer, this must remain a question for experimental determination; the proof of an analysis—or a synthesis—is in the predictions it will enable us to make.

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BOOK REVIEWS

General Theory of Value: Its Meaning and Basic Principles Construed in Terms of Interest. RALPH BARTON PERRY. New York: Longmans Green & Company. 1926. Pp. xviii + 702.

The philosopher—it is his distinction and his danger—is obligated to the totality of things. The principle of comprehensiveness, to which he is committed, almost inevitably issues in a book which, if it does not always run to the six hundred and ninety odd pages before us, is yet likely to be a rather stately volume. Professor Perry's book does not fail of this distinction of the philosopher, nor does it wholly escape his dangers. The concept of value is one of maximum relevance in present-day philosophy. Its ramifications lead in all directions, including the by-paths of biology, psychology, and all the various social sciences. The author is a competent and authoritative guide along these many ways. If, in following the manifold "connections and contours" he so skillfully traces, we sometimes seem to lose what have appeared to us to be the main

[9] *Cf.* H. J. Davenport, *Economics of Enterprise*, p. 387n, 389n.

issues of value theory, it is doubtless largely due to our own prejudices, but partly at least, I think, to the way in which he envisages his problem.

The present work, as might be expected, embodies the results of the long line of studies in value theory by the author, which have contributed so much to the development of the subject in this country. It also presents in more developed form the ethical theories made familiar in his *Moral Economy*. It expounds and criticizes the important doctrines of value which have emerged in the course of history, and defends the view that value in the broad sense is a function of interest, interest being psychologically analyzed in its connections with cognition, feeling, habit, and instinct. The author then discusses the relation of value to fact and truth, the meaning of personal and social values, the genesis and change of value. The investigation of these general problems is designed, in the author's own words, "to afford the basis for a systematic philosophy of criticism, and for the determination of the inter-relations and comparative claims of morality, industry, science, religion, art and politics."

A general theory of value, so conceived, can not fail to be of great service to the humanistic and social sciences. Written with all the lucidity and skill in analysis, long since associated with Professor Perry's writings, it will undoubtedly—and justly—be acclaimed as the general study of value which has long been felt to be a *desideratum* of these sciences. If this is its objective—and it seems to be—there is little but praise for the way in which the program has been carried out. On the other hand, it may well be questioned whether the philosophers will be equally satisfied. If a "general theory of value" should reflect at all adequately the whole range of value thinking of the last quarter century, if it should be expected to give us some more internal—even dramatic—sense of this movement, then our approval can not be unqualified. It is precisely because the present work is so admirable from the point of view of "science" that its limitations from the standpoint of philosophy must be recognized.

"Theory of value," according to Professor Perry, "belongs to the general intellectual movement of the application of science to life—shares its aspirations and participates in its efforts. Furthermore, as a general science of human life, it borrows both from the results and the technique of the special sciences of human life. It profits by what biology, psychology and the new social sciences have learned about man and it employs in its own behalf the genetic, comparative and analytical and descriptive methods which they have successfully exemplified" (p. 13). All this is, of course,

entirely true. It is a part, perhaps a half, of the story of value thinking in the last quarter century. This part of the story, the psychological and phenomenological part, Professor Perry tells extraordinarily well, probably better than could be done by any other American writer. But there is another part of the story that is not told. We get little or no sense of the motives or the problems of the main stream, or at least one of the main streams, of value thinking—that which derives from Kant and Lotze and which has become the driving force of so large a part of modern idealism. It tells us little or nothing of the relation of value theory to that part of the intellectual movement of our time that is concerned with the evaluation of science and scientific method themselves; or of that pressing problem of the modern philosophic consciousness, the place of values in a "naturalistic" world—that problem out of which the whole theory of value *eo nomine*, arose.

I do not mean, to be sure, that these movements are ignored. A considerable part of the book, roughly about a hundred pages, is given to the exposition and criticism of precisely these doctrines. Under the heading of "value as irrelevant to interest," the author considers all the objectivist theories, whether realistic or idealistic, that, in one way or another, look upon value as part of the nature of the world. Under the heading of "value as object of qualified interest," he considers all those theories that may be described as normative, that think of value as the "capacity to command interest," more particularly the theories of Kantian and Neokantian origin. The exposition of these doctrines, it goes without saying, is able and conscientious. The criticism is, on the whole, fair and often in a way telling. But ultimately it is not very convincing. One feels that these doctrines are, so to speak, so many *dead preparations*. Torn from their wider and deeper context, and labeled as their critic labels them, one almost begins to wonder how any one could ever have held them at all. One feels, in fact, that the whole question is more or less begged by the purely external standpoint assumed. Professor Perry's whole approach to value starts with the popular "distinction between that branch of human inquiry which deals with existence and which assumes the form of the so-called natural sciences and that which deals with ideals and standards of good and evil." Value is thus from the very start but a subjective *addendum* to existence, and it is precisely this premise that a large part of value theory denies.

The general thesis of the book is a modernized form of British empiricism. Value is defined as "any object of any interest."

For the author, the standpoint of "science" is final, and the psychological-biological explanation and interpretation of values the whole story. He is still largely, if not wholly, unaffected by the arguments of his fellow realists, no less than by those of the pragmatists and idealists, unaffected in short by the growing recognition in many quarters of the insufficiency of this approach, and the realization that value is a logically primitive concept that can be neither defined nor validated in terms of anything else. Professor Perry defends this thesis, it must be admitted, with great ability. To the charges of "circularity" and "relativism," constantly brought against this view, he has ready answers. The necessary relativism of such a theory of value is, he holds, not vicious as a similar relativism and scepticism is in a theory of knowledge—but *why* it is not is not made wholly clear to the present writer. As to the charge of circularity, I am not sure that the author quite grasps the point of those who make this criticism of relational definitions. At least he does not answer the charge directly, but rather attempts to show that it is only such a relational definition that enables us to avoid the contradiction involved in the fact that judgments of good and bad are passed on the same objects. In any case, he nowhere meets this patent fact: if one argues, as *he* does, that good or value is the desired, one needs a promise to the effect that satisfaction of desire is a good. The nature of good must in some sense be already known before it is predicated of satisfaction of desire. This is the essence of the charge of circularity.

It is only in the light of such general considerations that the many admirable details of Professor Perry's treatment can be properly evaluated. Yet a review that should confine itself to such generalities would wholly fail to give an adequate idea of the real quality and value of the book. I should like especially to call attention to the chapter on "The Biological Approach to Interest" and the two chapters on "The Unity of Society" and "Modes of Social Integration." I know of no writings on these subjects that the psychologist and sociologist could read to greater advantage. Needless to say, on such moot points as Behaviorism, Freudianism, the nature of society—and they are treated at length—the author's positions are eminently judicious and well informed.

As there are many points at which one would like to speak with more detailed approval, so there are others that merit more detailed criticism. With some of these the present writer has concerned himself elsewhere; unfortunately they can not be profitably entered upon at any length here. One point, however, can not be wholly passed by, namely, the relation of value to truth and existence.

Professor Perry's discussion of *meaning*, for instance—in connection with his analysis of cognition—is one of those places where one sadly misses adequate treatment, where, from the point of view of a philosophical theory of value, one would gladly give many other pages of the book for even a slight addition to the paltry four pages devoted to the topic. The "meaning of meaning" is fast becoming the crux of value theory as, indeed, of epistemology and metaphysics. Perry limits meaning to the psychological sense, excluding all logical and metaphysical problems. It is precisely the question whether this can legitimately be done, whether, if *meaning* is taken in its more general sense and in its widest implications, it can be separated from value—whether, finally, an epistemological study of the meanings of existence and truth does not lead to the primacy of value. In any case, it is at least possible that a more vigorous pursuit of this elusive problem of meaning might lead to a significant revision of the author's general theory of value.

The inadequate treatment of meaning affects, I can not help feeling, his whole treatment of the relation of value to cognition. "The predicate of the judgment of value," we are told, "is the act or state of interest, the analysis of which is the central theme of a *psychology* of value. The *only* existent object in the case of true judgments of value is the interest qualified by its objective" (italics mine). It is difficult to see how, on this view, theory of value can be anything but psychological description of interests, still more difficult to see how a true judgment of value can be ultimately anything more than the statement that such and such an interest exists. The method of a theory of value must, Professor Perry admits, be capable of dealing with ultimate problems of validity. "It can not be empirical and descriptive in any narrowly positivistic sense which excludes either epistemology or metaphysics." And yet the whole tendency of his method is, if not, as in the case of his discussion of meaning, deliberatively to exclude them, still to leave them in a more or less unsatisfactory state.

Professor Perry, it must be frankly stated, has done little in this book to clear away the difficulties his theory has presented to his critics. On the other hand, what he has to say on the still more fundamental question of the "value character" of the ontological predicates, serves to throw a flood of light on his entire position. The thesis that "the very nature of fact must be explained in terms of value, that there are facts because, and only because, they satisfy the inner needs of some will or purpose, and that value in this fundamental and primordial sense can therefore not be regarded as a fact or existence without a vicious circle," presents, he admits,

a difficulty to his theory. There are, he holds, two possible replies. "The explanation of fact and existence in terms of value may be disputed, as realism disputes it. It may be contended that existence is more fundamental than value or at any rate independent of it. Secondly, even if it be admitted that existence is explicable in terms of some cosmic will or purpose, it may still be contended that such a will or purpose must in some sense be. If it does not exist, then some further category of being must be provided for it. And if it *is* whatever its ontological status, then it is capable of being defined or at least exhibited." It is not my object to examine these replies. It might, indeed, be said that realism's denial has itself no meaning except as the acknowledgment of the "value" of independence is presupposed. Or it might be said that the ontological status of value *is* its validity, and it does not then at all follow that it can be either defined or exhibited as a psychical or physical existent. Enough for my present point that, from the standpoint of a general philosophical theory of value, problems such as these are absolutely fundamental, that they have scarcely received adequate treatment, and that they certainly can not be solved by a merely empirical analysis of the relations of cognition to interest.

Professor Perry's book is in many respects an admirable piece of workmanship. The fruit of hard thinking and ripe scholarship, it must be reckoned a valuable contribution to American philosophy. If I confess, as in honesty I must, to a certain feeling of disappointment, it is because it is not due wholly, or chiefly, to my dissent from some of his main positions. It has its source in something very much deeper. Perhaps it is because the present volume is largely *prolegomena* and the problems in which I am chiefly interested are reserved for another book to be entitled *Realms of Value*. Perhaps I have but to wait with the best patience I can command for this second volume. But I am not sure. When I am told in the Postscript that "it remains only to extend to values the distinctions that have already been applied to interests, and hence to classify them as positive and negative, progressive and recurrent, potential and actual, independent and dependent, playful and real, submissive and aggressive, subjective and objective, immediate and mediate, personal and social, and that this classification may be termed psychological," I wonder whether I shall even then be any nearer my ideal of what a general theory of value should be.

Professor Perry is aware that the philosophers are not likely to be wholly content with his way of envisaging the value problem. "There are two kinds of philosophy," he tells us in his preface, "that which cuts the Gordian knot and that which attempts to untie it.

The present book attempts to exemplify the latter rather than the former method." The relation of value to existence and truth is the Gordian knot of modern philosophy. Which of the two ways in philosophy attempts to cut the knot and which to untie it? That way which, like the present method, separates value and reality *ab initio* and makes of value merely a subjective *addendum* to existence, or that which, from Plato on, starts from the inseparability of value and reality and attempts to express ever more and more adequately, that relation?

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Natural Laws and Human Hopes. M. C. OTTO. New York: Henry Holt and Co. 1926. Pp. 97.

This small package contains a more positive doctrine of the relations of facts and values than the author's *Things and Ideals.* It might almost be included in that work. In the earlier book it was shown that many current compromises between the affirmations of science and the demands of the higher life are not satisfactory. In this one it is shown that the uniformities discoverable in nature are amenable to human demands, the vast stores of energy unlocked by modern science can be used either to enrich and dignify life or to impoverish and degrade it.

Just recently an officer of the U. S. Chamber of Commerce, for example, called attention to the fact that this is "the business man's age." "Capitalism," he said, "is today triumphant." Even idealism is being put on "a business basis." The main doctrines of the Gospel according to Business are: "The hopes men set their hearts upon are to be dictated by business men"; "The technological means for the realization of these hopes are to be furnished by men of science"; "The apprenticeship necessary to prepare the rising generation to take its place quickly and efficiently in the industrial system, is to be supervised by educators"; and, "To foster devotion to those moral and religious codes wanting which the mass of men can not be held to habits of industry and sobriety, but are prone to attempt radical reconstructions of the economic order, is the obligation of religion." Does all this mean that the energies whose release was made possible by science are to be used to enrich and dignify life? Otto never fails to ask how the concept he is considering functions as a control in life, and so he asks, "Shall business have a *place* in life, or *be* life?" He answers, "Render unto Cæsar the things that are Cæsar's—but remember that he is Cæsar, not God." This, rather than the growing popularity of science or the

youth movement, is *the problem* of this age. The essay is preceded by four very interesting quotations and followed by a list of works quoted in the text.

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JOURNALS AND NEW BOOKS

The Monist. Vol. XXXVII. No. 1. Contemporary Russian Philosophy: *S. Frank.* The Philosophy of Religion in French-Speaking Countries from 1914–1925: *Emmanuel Leroux.* The Theory of Sensa. An Aspect of Current Realism: *W. P. Blevin.* The Appearance of Values: *L. A. Reid.* The Religious Relevancy of Recent Realism: *D. Luther Evans.* Mathematical Reality: *J. B. Shaw.* Mathematics and Natural Science: *Arnold Dresden.* Infinity and the Infinitesimal (concluded): *William Parkhurst* and *W. J. Kingsland, Jr.*

Revue Philosophique. LII^e Année, Nos. I et 2. Hellénisme et Christianisme aux premiers siècles de notre ère: *É. Bréhier.* Qu'est-ce que la vérité? (Ontologie et éthique): *L. Chestov.* Progrès récents en physique: *L. Brillouin.* Le cœur et la raison selon Pascal: *J. Laporte.*

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NOTES AND NEWS

Attention is called to the appearance of a new quarterly journal entitled *Studi e Materiali di Storia delle Religioni,* edited by Professors C. Formichi, R. Pettazzoni, and G. Tucci, of the University of Rome. The journal is international in scope; its articles are contributed by scholars of various countries and each is published in the language in which it happens to be written. It should be of interest to students of the history of philosophy and of religions in general, but is of special value to students of oriental thought and culture, for it contains a number of works by competent scholars on early Chinese texts of the Mahayana Buddhists, as well as various studies on the religion of the Parsis, on the confession of sins among primitive peoples, on paganism among the Slavs, etc. The reports on researches, the reviews and notices of new books, are unusually excellent. The journal is devoted whole-heartedly to scientific research and is not connected with propaganda of any sort. The first volume appeared in 1925. The address is Anonima Romana Editoriale, Via Virgilio 16, Rome, and the subscription price for foreign countries is forty lire annually or twelve lire a copy.

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Volume XXIII. No. 25. December 9, 1926.

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Naïve Psychological Realism vs. Critical Realism. HORACE B. ENGLISH.

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Volume XXIII. No. 26. December 23, 1926.

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Mr. Blake and the Paradox of Zeno. HENRY BRADFORD SMITH.

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